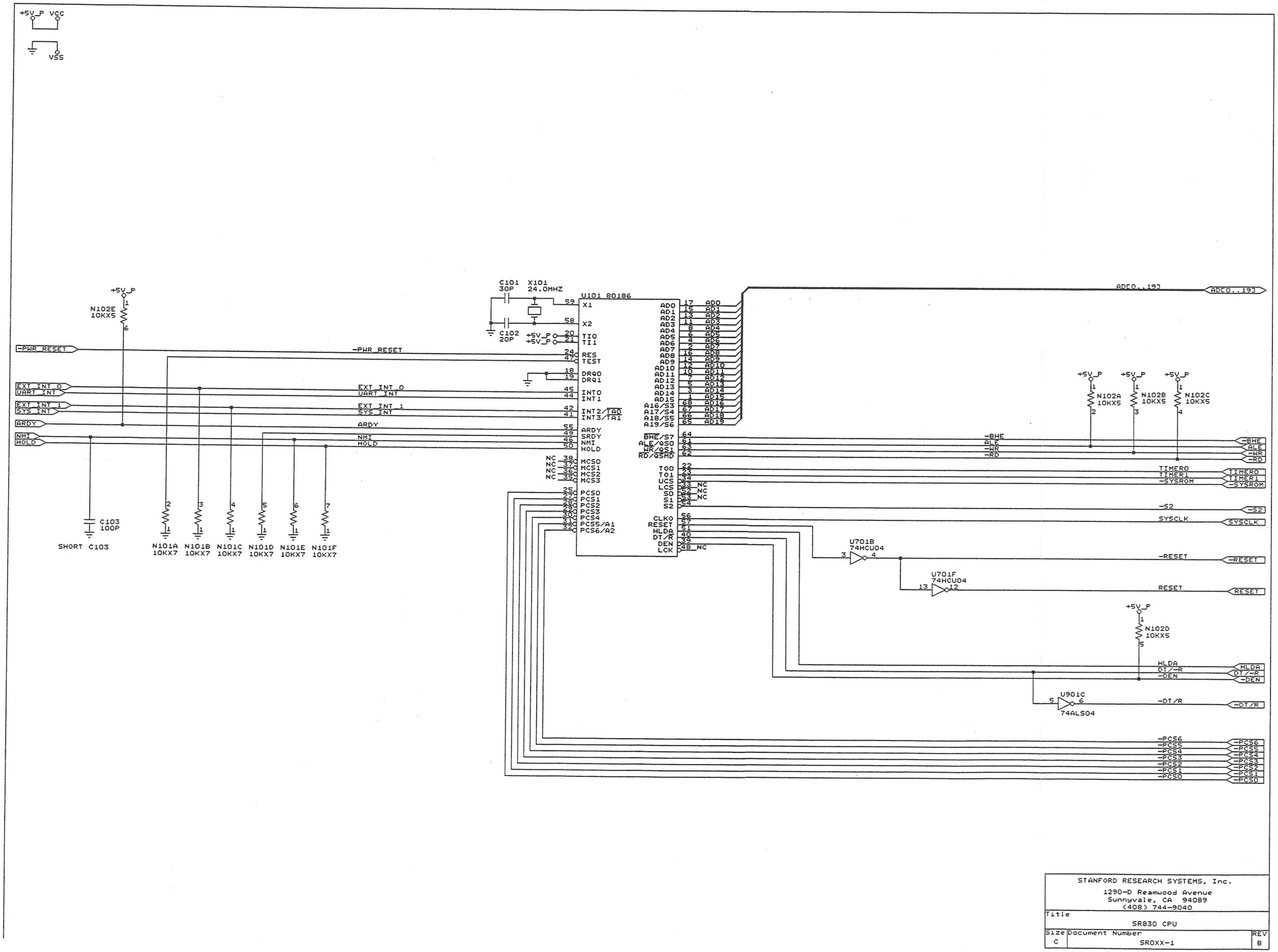
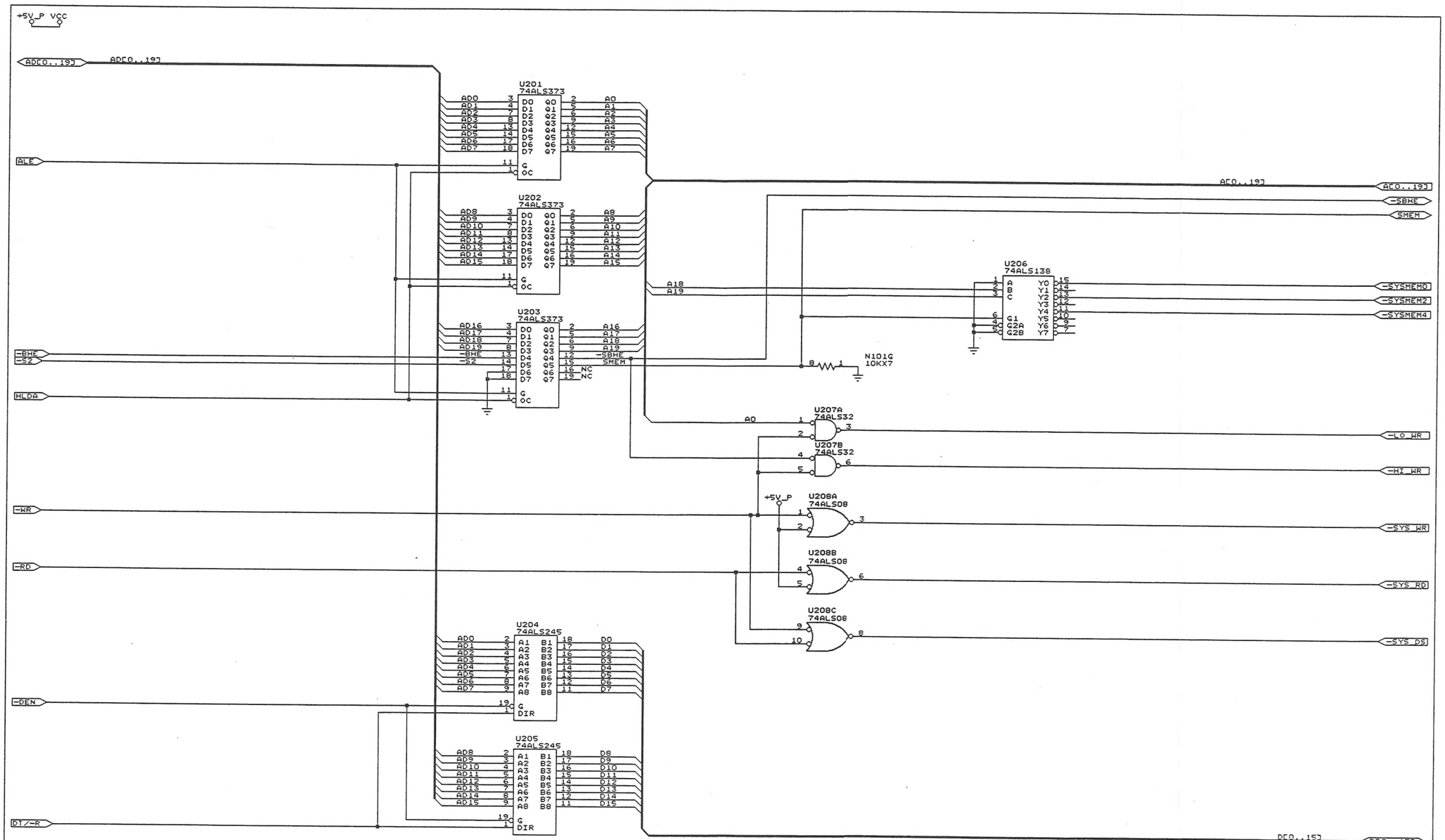
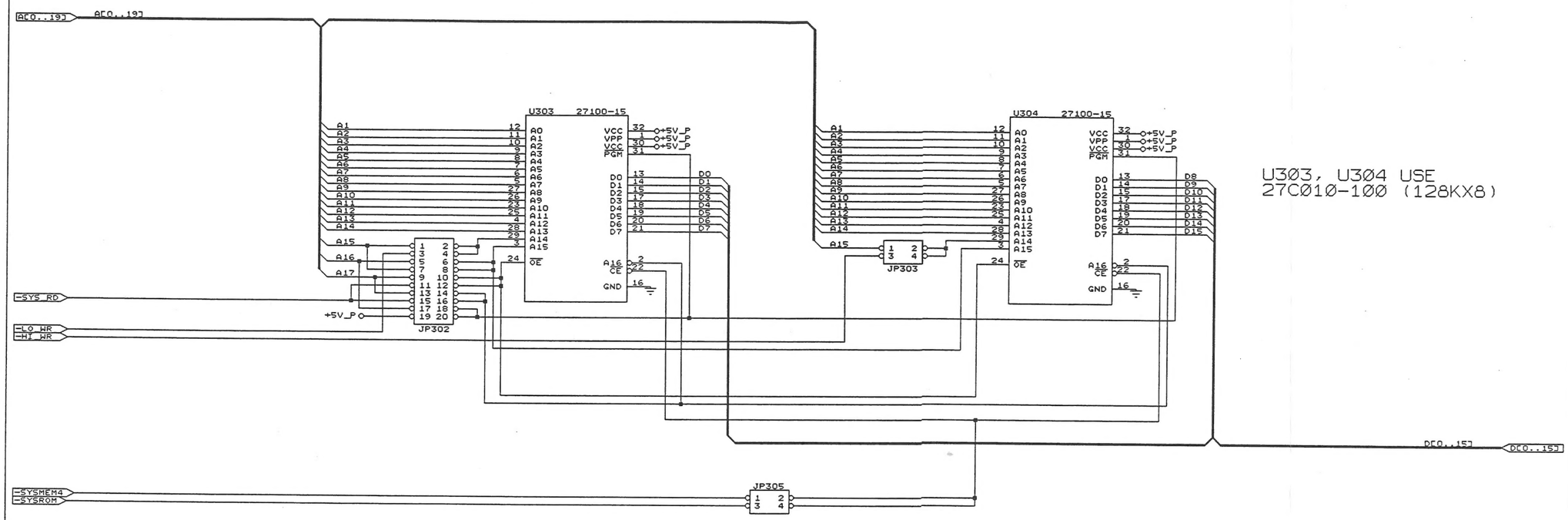


STANFORD RESEARCH SYSTEMS, Inc.	
1290-D Reamwood Avenue Sunnyvale, CA 94089 (408) 744-9040	
Title	SR830 CPU
Size: C	Document Number: SR0XX-1
REV: B	



STANFORD RESEARCH SYSTEMS, Inc.	
1290-D Reamwood Avenue Sunnyvale, CA 94089 (408) 744-9040	
Title	ADDRESS AND DATA BUFFERS
Size: C	Document Number: SROXX-2 — REV: B

SYSTEM BOOT ROM
(256K BYTES OR 128K BYTES)



U303, U304 USE
27C010-100 (128KX8)

FOR DEBUG

	CONNECT PINS
JP302	3&4 7&8 11&12 13&14 17&18
JP303	3&4
JP305	1&2

FOR SR830

	CONNECT PINS
JP302	1&2 5&6 11&12 13&14 19&20
JP303	1&2
JP305	3&4

STANFORD RESEARCH SYSTEMS, Inc.
1290-D Reamwood Avenue
Sunnyvale, CA 94089
(408) 744-9040

Title		
SYSTEM ROM		
Size: C	Document Number: SR0XX-3	REV: B

+5V_P VCC

Q701
2N3906

D701
5082-2800A

R704
10K

BT701
BR-2/3A

+5V_P

R701
51K

R702
1.0K

Q702
2N3904

R703
10K

BATTPWR

BATTPWR

LOW PROGRAM RAM (256K BYTES OR 64K BYTES)
BATTERY BACKED UP

A[0..19]

A[0..19]

U401
62XXX

U402
62XXX

R401
10K

D401
1N4148

-SYSMEMO

-SYSMEMO

R402
4.7K

Q401
2N5210

-RESET

-RESET

-SYS_RD

-SYS_RD

-LO_WR

-LO_WR

-HI_WR

-HI_WR

D[0..15]

D[0..15]

SR830

U401-U402 USE
581000-10
OR EQUIVALENT
(128KX8 RAM)

PROGRAM RAM (256K BYTES OR 64K BYTES)

STANFORD RESEARCH SYSTEMS, Inc.
1290-D Reamwood Avenue
Sunnyvale, CA 94089
(408) 744-9040

Title		
SYSTEM RAM		
Size	Document Number	REV
C	SR0XX-4	B

+5V_P VCC

A[0..19]

A[0..19]

SYSTEM PORT DECODE
8 BLOCKS OF 16 LOCATIONS

U501
74ALS138

A4
A5
A6
+5V_P
-PCS0
-WR

A, B, C, G1, G2A, G2B

Y0 = STROBE
Y1 = LED_CLKO
Y2 = LED_CLK1
Y3 = ODD
Y4 = -SPORT_WR
Y5 = EVEN
Y6
Y7

STROBE
LED0
LED1
ODD
-SPORT_WR
EVEN

U502
74ALS138

A4
A5
A6
+5V_P
-RD

A, B, C, G1, G2A, G2B

Y0 = -KNOB_RD
Y1
Y2
Y3 = -KEYPAD_RD
Y4 = -STAT_RD
Y5
Y6
Y7

-KNOB_RD
-KEYPAD_RD
-STAT_RD

U503
74ALS138

A4
A5
A6
+5V_P
ALE
-PCS1

A, B, C, G1, G2A, G2B

Y0
Y1 = -GPIB_SEL
Y2
Y3
Y4 = -EXT_CS_0
Y5 = -EXT_CS_1
Y6 = -EXT_CS_2
Y7 = -EXT_CS_3

-GPIB_SEL
-EXT_CS_0
-EXT_CS_1
-EXT_CS_2
-EXT_CS_3

-EXT_CS_3 MAY NOT
BE USED IF THE
DEBUG UART IS IN

U207C
74ALS32

-SYS_DS
-PCS2

9
10
8

-UART_SEL

-UART_SEL

STANFORD RESEARCH SYSTEMS, Inc.
1290-D Reamwood Avenue
Sunnyvale, CA 94089
(408) 744-9040

Title
SYSTEM DECODE

Size	Document Number	REV
C	SROXX-5	B

+5V_P VCC

FRONT PANEL CONNECTOR
KEYPAD & KNOB

LED +5V
-KEYPAD_RD
-RESET
LED_CLKO
LED_CLK1
STROBE
ODD
EVEN
-PCS0

JP604

U614 74HCT245
LED_EN
-KEYPAD_RD
DIR

HEADER17X2
JP602

U615 74HCT245
-KEYPAD_RD

KN0B_A
KN0B_B

D[0..15]

R601 10K

U208D 74ALS08

U901A 74ALS04

SYS_INT

U608 74HCT244
-KN0B_INT
-GPIB_INT
50/-60
KN0BA
KN0BB

JP603

D3

U601A 74HCT74

SPKR_EN

-STAT_RD
-SPORT_WR

U610A 74HCT74
U610B 74HCT74
U611A 74HCT74
U611B 74HCT74

U612B 74HC14
U612C 74HC14
U612D 74HC14
U612E 74HC14
U612F 74HC14

U602A 74HC20

-KN0B_INT

-KN0B_RD

TIMER1
-TIMER1

U602B 74HC20

R712 1.0K

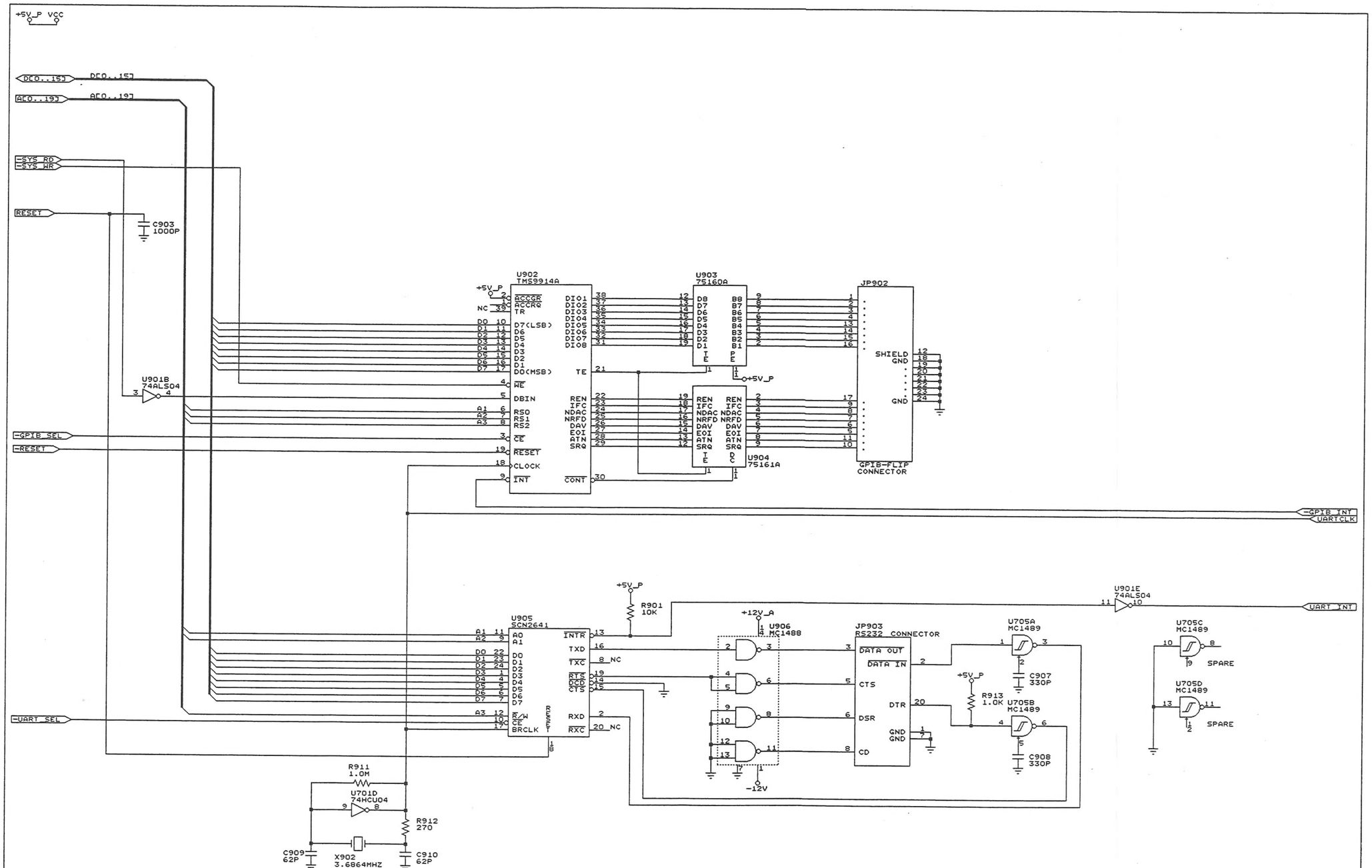
Q705 2N3906

R713 22 SPEAKER CONNECTOR

LS701 SPEAKER

U601B 74HCT74 SPARE

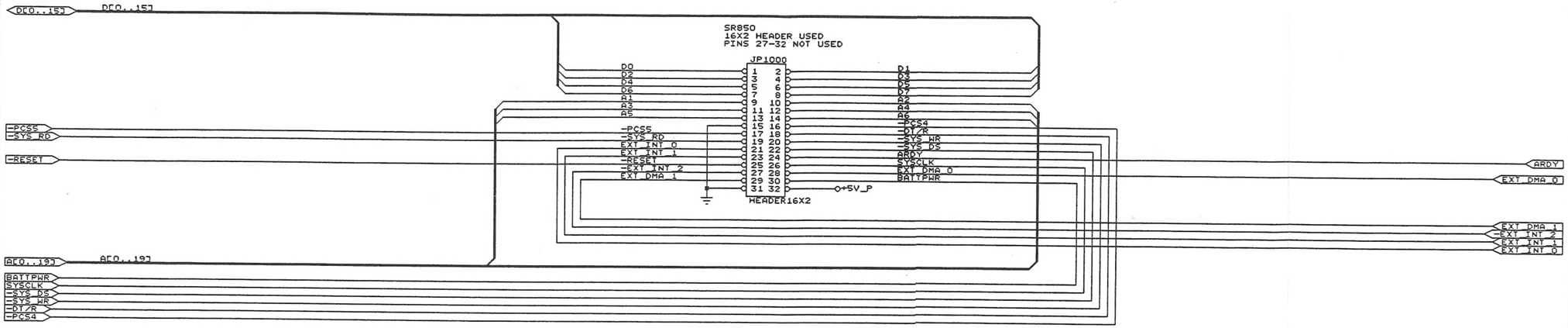
STANFORD RESEARCH SYSTEMS, Inc.	
1290-D Reamwood Avenue Sunnyvale, CA 94089 (408) 744-9040	
Title	SYSTEM I/O
Size: C	Document Number: SR0XX-6 REV: B

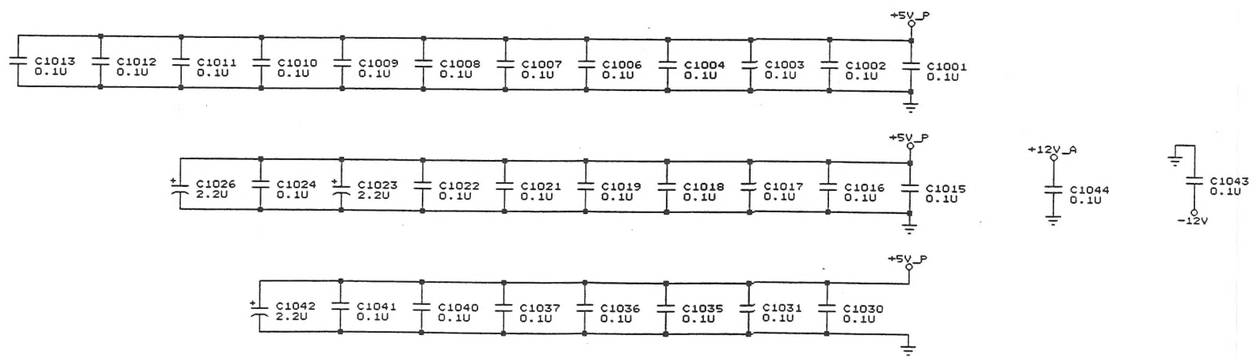


STANFORD RESEARCH SYSTEMS, Inc.	
1290-D Reamwood Avenue Sunnyvale, CA 94089 (408) 744-9040	
Title	SYSTEM INTERFACES
Size: C	Document Number: SROXX-7
REV: B	

+5V_P VCC

EXPANSION CONNECTOR





STANFORD RESEARCH SYSTEMS, Inc.	
1290 D Reamwood Ave. Sunnyvale, CA 94089 (408)744-9040	
Title	SYSTEM INTERCONNECT
Size: C	Document Number: SR0XX-8 — REV: B

+5V_P VCC

T1

4 VIOLET 41CT
6 BLK/WHT CT
8 VIOLET 41CT
3 GRAY 33CT
7 WHITE CT
9 GRAY 33CT
1 BLUE 7VAC
11 BLUE 7VAC
2 BLACK 8VAC
10 BLACK 8VAC
5 GND

HEADER11

G2 G1

D30 MUR410
D31 MUR410
D32 MUR410
D33 MUR410

C1 5600U-35V
C2 5600U-35V

+24V
-24V

D4 MBR360
D2 MBR360
D3 MBR360
D5 MBR360

C3 15000U-35V
C4 15000U-35V

+18V
-18V

D6 MBR360
D7 MBR360
D8 MBR360
D9 MBR360

C5 47000U-10V
C6 15000U-25V

+8V
-8V

D34 MBR360
D35 MBR360
D36 MBR360
D37 MBR360

Z1
FAN

INSTRUMENT POWER CONNECTOR

+5V_I
-5V_I
JP4
+18V
-18V
+20V_ANLG
-20V_ANLG
HEADER17X2

+5V_P
R3 10K
R4 100K
R5 10K
C9 10U-E50
Q4 2N3904
Q3 2N3904
POWER DOWN RESET

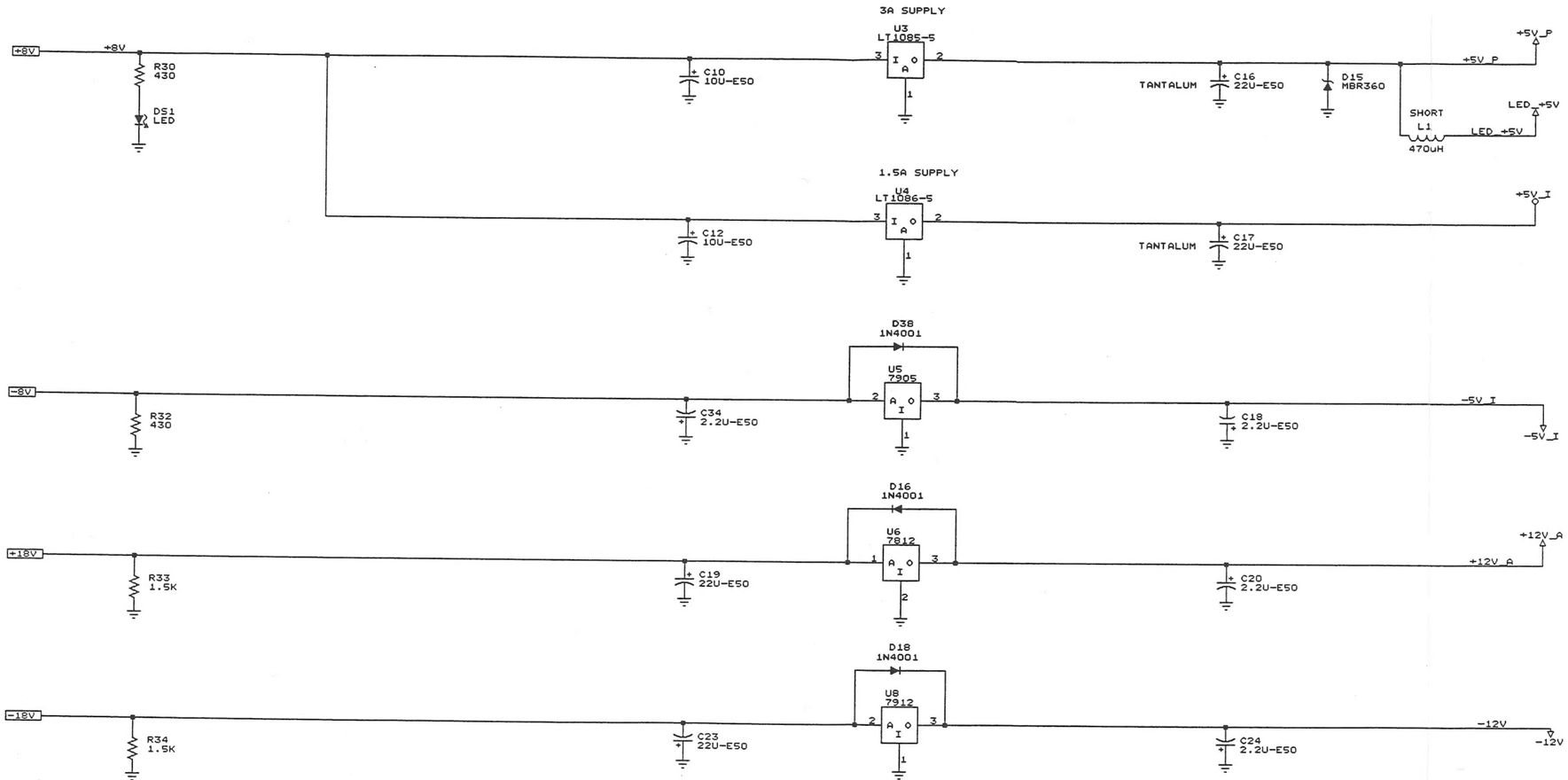
+5V_P
R6 2.0M
R7 3.3K
C7 .1U
U1A 74HC14
U1D 74HC14
-PWR_RESET
POWER UP RESET

U1C 74HC14
U1B 74HC14
U1E 74HC14
U1F 74HC14

STANFORD RESEARCH SYSTEMS
1290 D REAMWOOD AVENUE
SUNNYVALE, CA 94089
(408) 744 9040

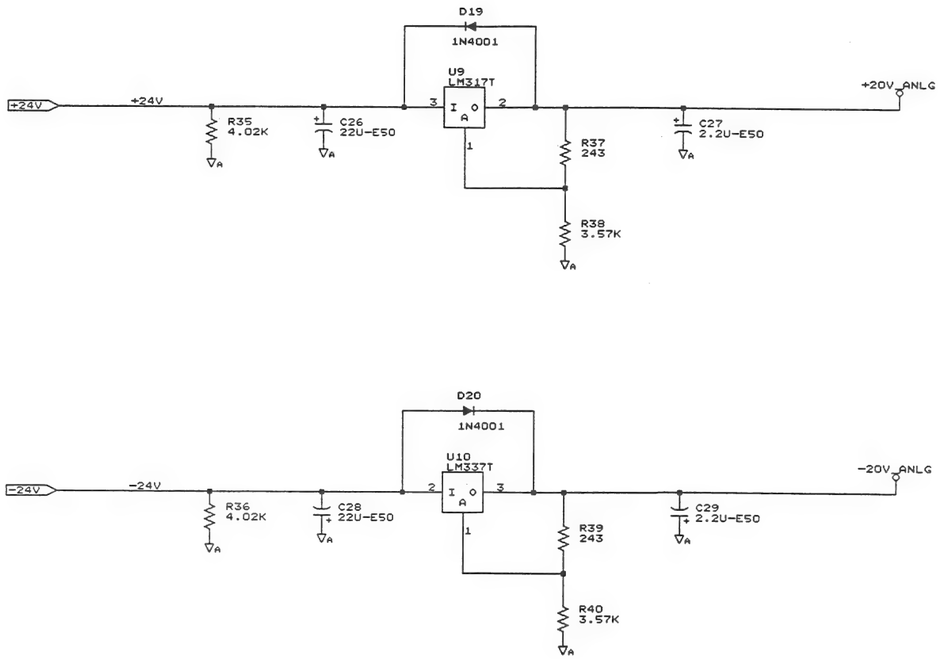
Title: UNREGULATED SUPPLIES

Size: C | Document Number: SR0XX-9 | REV: B

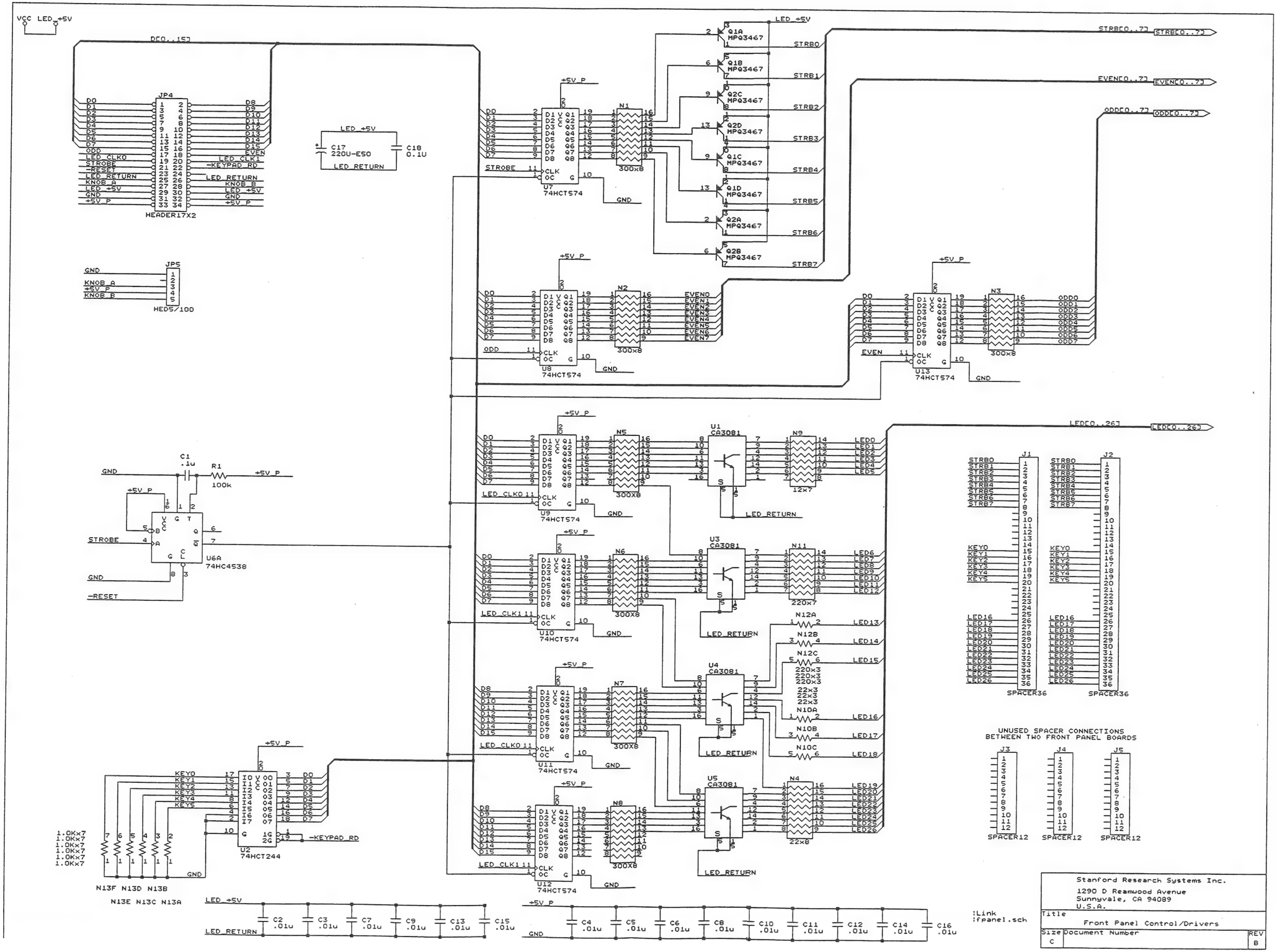


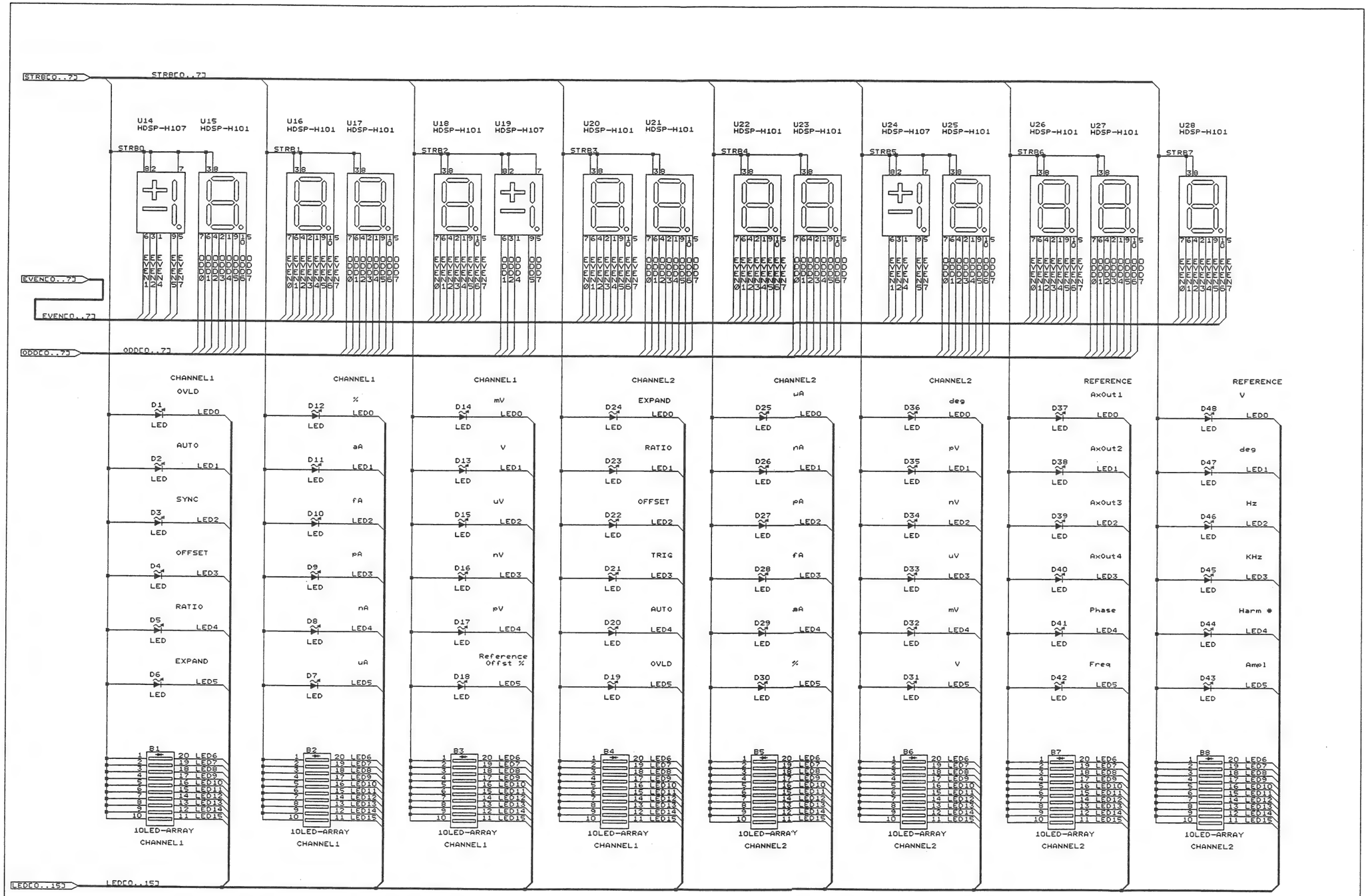
STANFORD RESEARCH SYSTEMS 1290 D REAMWOOD AVENUE SUNNYVALE, CA 94089 (408) 744 9040	
Title	DIGITAL SYSTEM SUPPLIES
Size: C	Document Number: SROXX-10 — REV: B

ANALOG REGULATION



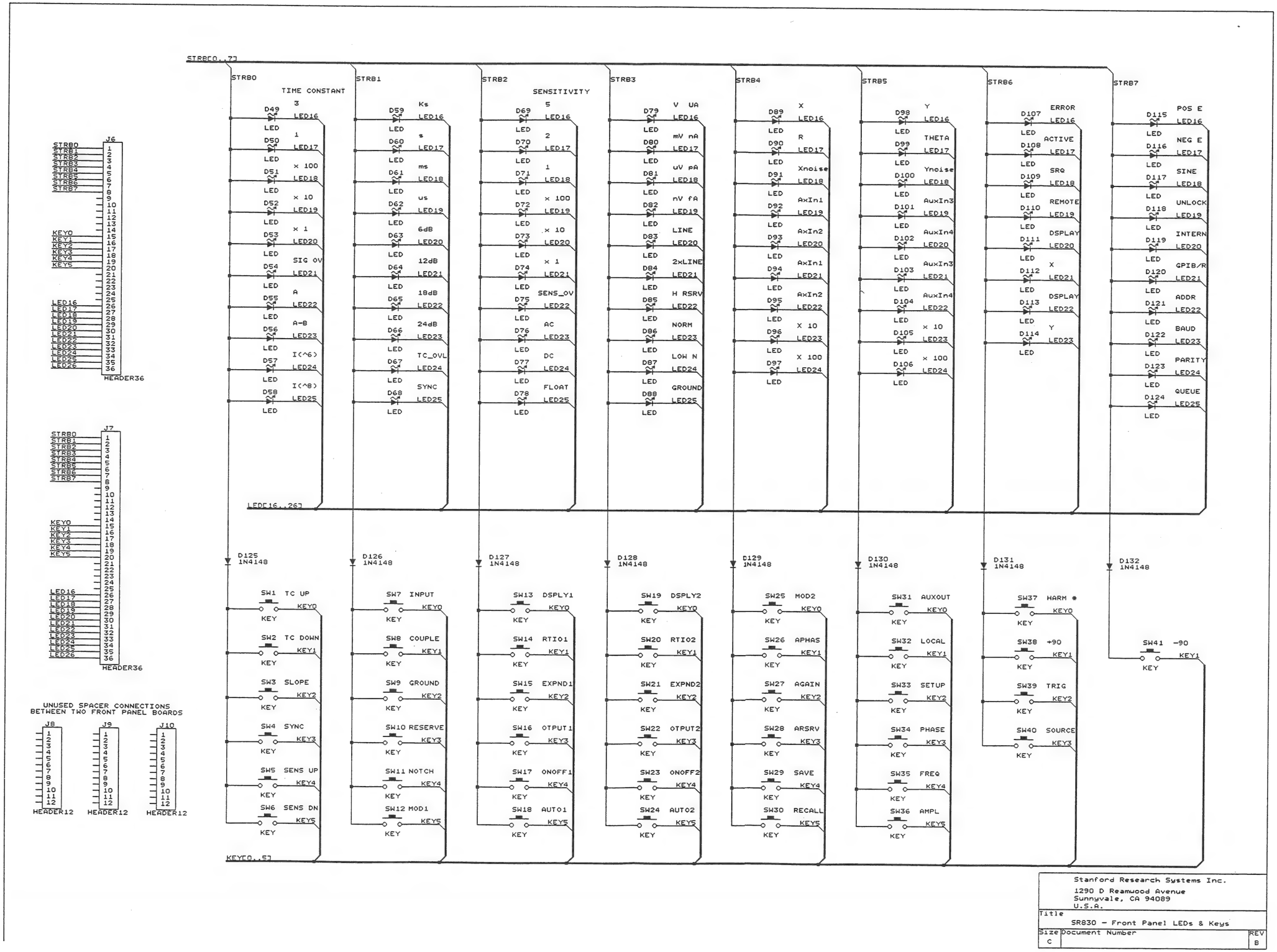
Stanford Research Systems Inc. 1290 D Reamwood Avenue Sunnyvale, CA 94089 U.S.A.	
Title	ANALOG SUPPLIES
Size: C	Document Number: SROXX-11 — REV: B


VCC LED +5V
D[0..15]
JP4
HEADER17X2
LED +5V
C17 220U-E50
C18 0.1U
LED RETURN
JP5
HED5/100
U7 74HCT574
U8 74HCT574
U13 74HCT574
U9 74HCT574
U10 74HCT574
U11 74HCT574
U12 74HCT574
N1
N2
N3
N5
N6
N7
N8
300x8
Q1A MPQ3467
Q1B MPQ3467
Q2C MPQ3467
Q2D MPQ3467
Q1C MPQ3467
Q1D MPQ3467
Q2A MPQ3467
Q2B MPQ3467
STRB[0..7]
EVEN[0..7]
ODD[0..7]
LED[0..26]
U1 CA3081
U3 CA3081
U4 CA3081
U5 CA3081
N9 12x7
N11 220x7
N12A 220x3
N12B 220x3
N12C 220x3
N10A 22x3
N10B 22x3
N10C 22x3
N4 22x8
U6A 74HC4538
U2 74HCT244
1.0Kx7
N13F N13D N13B
N13E N13C N13A
J1
J2
SPACER36
J3
J4
J5
SPACER12
UNUSED SPACER CONNECTIONS BETWEEN TWO FRONT PANEL BOARDS
:Link :fpanel.sch
Stanford Research Systems Inc.
1290 D Reamwood Avenue
Sunnyvale, CA 94089
U.S.A.
Title
Front Panel Control/Drivers
Size C
Document Number
REV B

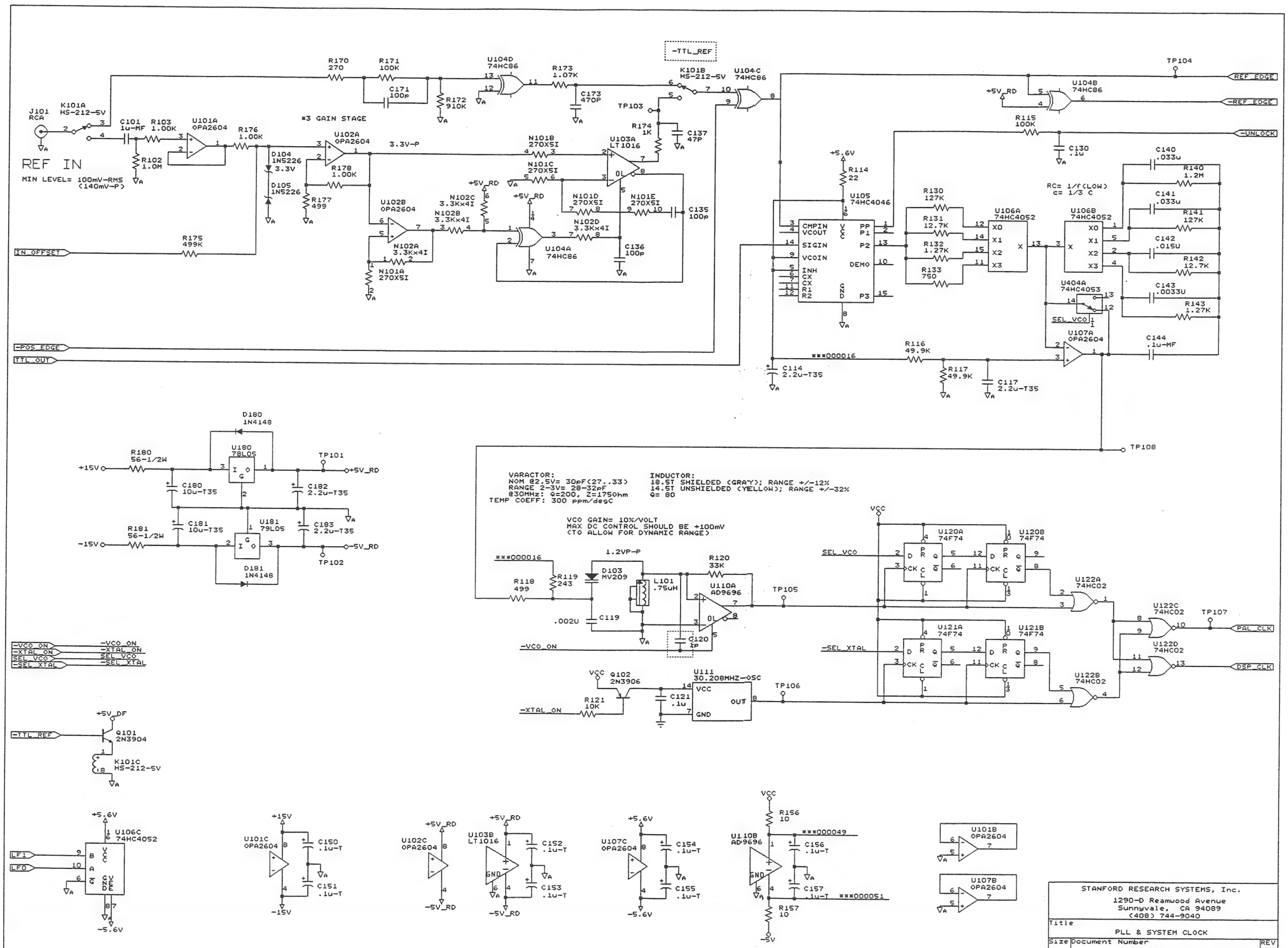


7 Segment LEDs, Display LEDs & Bar Graph Arrays

Stanford Research Systems Inc. 1290 D Reamwood Avenue Sunnyvale, CA 94089 U.S.A.	
Title	SR830 - Front Panel Display
Size: C	Document Number:
	REV: B



Stanford Research Systems Inc.	
1290 D Reamwood Avenue Sunnyvale, CA 94089 U.S.A.	
Title	SR830 - Front Panel LEDs & Keys
Size C	Document Number — REV B


-TTL_REF
J101 RCA
K101A HS-212-5V
REF IN
MIN LEVEL= 100mV-RMS (140mV-P)
C101 1u-MF
R103 1.00K
R102 1.0M
U101A OPA2604
R176 1.00K
#3 GAIN STAGE
R170 270
R171 100K
C171 100p
R172 910K
U104D 74HC86
R173 1.07K
C173 470P
TP103
K101B HS-212-5V
U104C 74HC86
R174 1K
C137 47P
U102A OPA2604
3.3V-P
D104 1N5226 3.3V
D105 1N5226
R178 1.00K
R177 499
IN_OFFSET
R175 499K
U102B OPA2604
N102A 3.3Kx4I
N102B 3.3Kx4I
N102C 3.3Kx4I
N102D 3.3Kx4I
N101A 270X5I
N101B 270X5I
N101C 270X5I
N101D 270X5I
N101E 270X5I
U103A LT1016
+5V_RD
U104A 74HC86
C135 100p
C136 100p
TP104
REF_EDGE
-REF_EDGE
-UNLOCK
U104B 74HC86
R115 100K
C130 .1u
+5.6V
R114 22
U105 74HC4046
CMPIN
VCOUT
SIGIN
VCOIN
INH
C1X
C2X
R1
R2
PP
P1
P2
DEMO
P3
R130 127K
R131 12.7K
R132 1.27K
R133 750
U106A 74HC4052
U106B 74HC4052
RC= 1/f(LOW)
C= 1/3 C
C140 .033u
R140 1.2M
C141 .033u
R141 127K
C142 .015u
R142 12.7K
C143 .0033u
R143 1.27K
U404A 74HC4053
SEL VCO
U107A OPA2604
C144 .1u-MF
R116 49.9K
R117 49.9K
C117 2.2u-T35
C114 2.2u-T35
###000016
-POS_EDGE
TTL_OUT
D180 1N4148
U180 78L05
R180 56-1/2W
+15V
C180 10u-T35
C182 2.2u-T35
TP101
+5V_RD
R181 56-1/2W
-15V
C181 10u-T35
U181 79L05
C183 2.2u-T35
-5V_RD
TP102
D181 1N4148
TP108
VARACTOR:
NOM @2.5V= 30pF(27..33)
RANGE 2-3V= 28-32pF
@30MHz: Q=200, Z=175Ohm
TEMP COEFF: 300 ppm/degC
INDUCTOR:
18.5T SHIELDED (GRAY); RANGE +/-12%
14.5T UNSHIELDED (YELLOW); RANGE +/-32%
Q= 80
VCO GAIN= 10%/VOLT
MAX DC CONTROL SHOULD BE +100mV
(TO ALLOW FOR DYNAMIC RANGE)
VCC
###000016
1.2VP-P
R118 499
R119 243
D103 MV209
L101 .75uH
R120 33K
U110A AD9696
TP105
C119 .002U
C120 ip
-VCO_ON
VCC Q102 2N3906
U111 30.208MHZ-OSC
R121 10K
C121 .1u
VCC
GND
OUT
TP106
-XTAL_ON
SEL_VCO
-SEL_XTAL
U120A 74F74
U120B 74F74
U121A 74F74
U121B 74F74
U122A 74HC02
U122B 74HC02
U122C 74HC02
U122D 74HC02
TP107
PAL_CLK
DSP_CLK
-VCO_ON
-XTAL_ON
SEL_VCO
-SEL_XTAL
+5V_DF
-TTL_REF
Q101 2N3904
K101C HS-212-5V
+5.6V
U106C 74HC4052
LF1
LF0
-5.6V
+15V
U101C OPA2604
C150 .1u-T
C151 .1u-T
-15V
+5V_RD
U102C OPA2604
-5V_RD
U103B LT1016
C152 .1u-T
C153 .1u-T
+5.6V
U107C OPA2604
C154 .1u-T
C155 .1u-T
-5.6V
VCC
U110B AD9696
R156 10
###000049
C156 .1u-T
C157 .1u-T
###000051
R157 10
-5V
U101B OPA2604
U107B OPA2604
STANFORD RESEARCH SYSTEMS, Inc.
1290-D Reamwood Avenue
Sunnyvale, CA 94089
(408) 744-9040
Title
PLL & SYSTEM CLOCK
Size C
Document Number 850-D1
REV E

RATIO= /2

RECONSTRUCTION FILTER

PASSBAND: DC-100KHZ
STOPBAND: 156 KHz
STOPBAND ATTENUATION: 80dB

GAIN= 6.0
2.6V-P/2(filter)-> 2.56V-RMS*11/10(attenuator) *2(50 Ohm terminator)

10p IS NECESSARY!!

SINE/10

OUTPUT IMPEDANCE= 49.5 Ohm

SINE OUT

8.0V-P

TP203

OFFSET= 20mV-P

3.3V-P

SQUARE OUT

TTL OUT

TP204

TP201

TP202

-SINE/10

SINE DEQ..7J

DEQ..7J

-ANALOG EN

ANALOG EN

STANFORD RESEARCH SYSTEMS, Inc.	
1290-D Reamwood Avenue Sunnyvale, CA 94089 (408) 744-9040	
Title	SINE RECONSTRUCTION & OUTPUT ATTENUATOR
Size: C	Document Number: 850-02
REV: E	

3V TO 14.2V

X OUT
Y OUT
FRONT OUT1
FRONT OUT2
DAC OUT1
DAC OUT2
DAC OUT3
DAC OUT4

U301A LF347 — N303A 100x4I — N301A 1.5Kx4I — N302A 5.6Kx4I — C301 100p — OUTPUT0
U301B LF347 — N303B 100x4I — N301B 1.5Kx4I — N302B 5.6Kx4I — C302 100p — OUTPUT1
U301C LF347 — N303C 100x4I — N301C 1.5Kx4I — N302C 5.6Kx4I — C303 100p — OUTPUT2
U301D LF347 — N303D 100x4I — N301D 1.5Kx4I — N302D 5.6Kx4I — C305 100p — OUTPUT3
U302A LF347 — N306A 100x4I — N304A 1.5Kx4I — N305A 5.6Kx4I — C307 100p — OUTPUT4
U302B LF347 — N306B 100x4I — N304B 1.5Kx4I — N305B 5.6Kx4I — C308 100p — OUTPUT5
U302C LF347 — N306C 100x4I — N304C 1.5Kx4I — N305C 5.6Kx4I — C309 100p — OUTPUT6
U302D LF347 — N306D 100x4I — N304D 1.5Kx4I — N305D 5.6Kx4I — C310 100p — OUTPUT7

OUTPUT0..7]

BACK OUTPUT CONNECTOR

JP301 HEADER10X2

OUTPUT0	1	2	
OUTPUT1	3	4	
OUTPUT2	5	6	
OUTPUT3	7	8	
OUTPUT4	9	10	
OUTPUT5	11	12	
OUTPUT6	13	14	
OUTPUT7	15	16	
SQUARE OUT	17	18	
	19	20	

TRIG IN

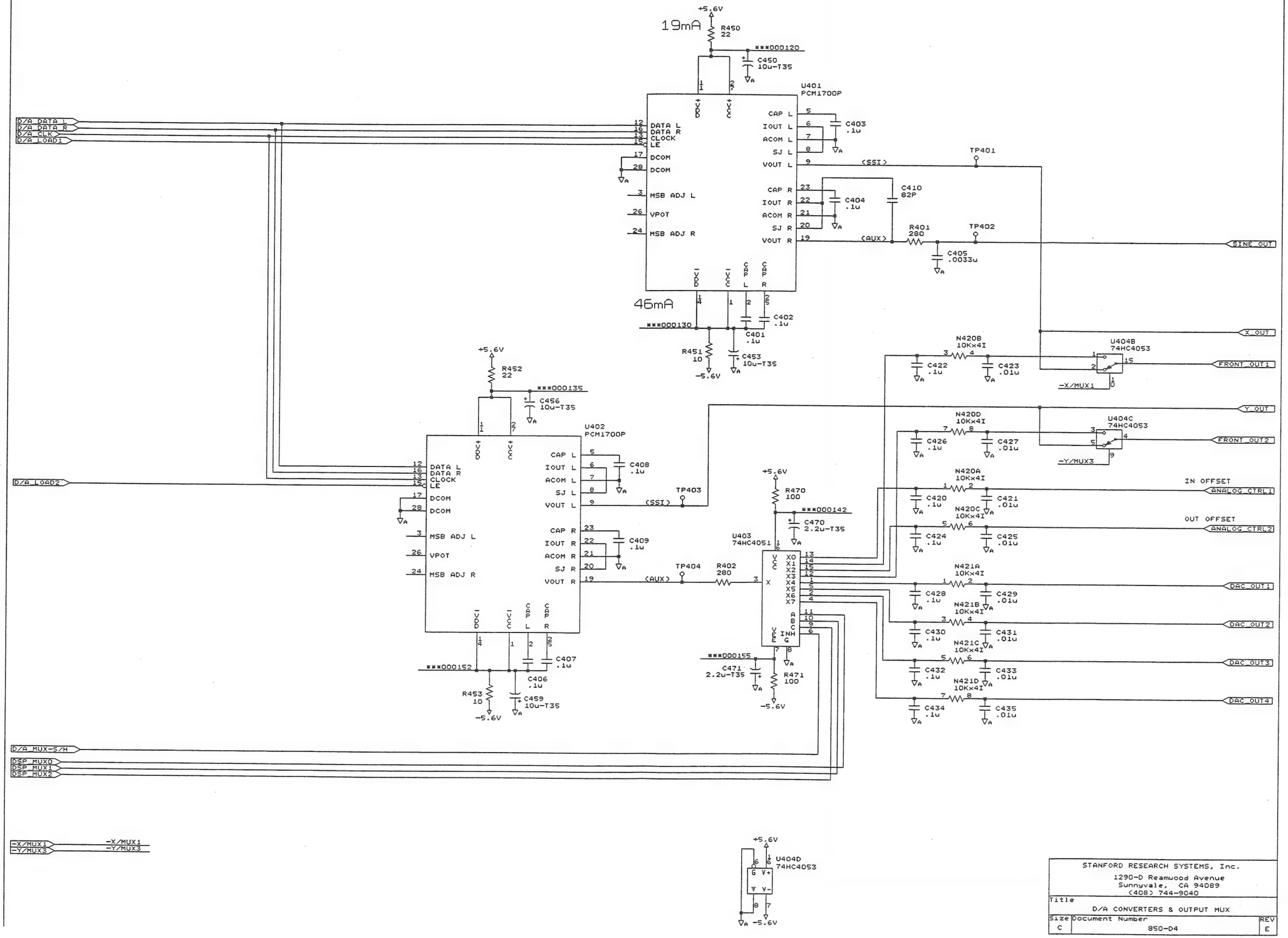
ANALOG CTRL1 — U303A LF353 — R301 1.5K — R302 5.6K — IN OFFSET
ANALOG CTRL2 — U303B LF353 — R303 1.5K — R304 5.6K — OUT OFFSET

MOUNT U680 & U681 ON HEAT SINK

TP301 +15V
U380 LM317 — R383 237 — R381 2.61K — C389 10U-E35 — C381 2.2U-T35
R385 56-1W — C385 2.2U-T35 — C383 2.2U-T35
U382 LM317 — R389 237 — R387 909 — C387 2.2U-T35
TP302 +5.6V
+22V
C390 10U-E35 — C382 2.2U-T35 — R382 2.61K — R384 237 — C386 2.2U-T35 — C384 2.2U-T35 — R388 909 — R390 237 — C388 2.2U-T35
-22V
U381 LM337 — R386 56-1W — U383 LM337
TP303 -5.6V
TP304 -15V

U301E LF347 — C350 .1u-T — C351 .1u-T — +15V / -15V
U302E LF347 — C352 .1u-T — C353 .1u-T — +15V / -15V
U303C LF353 — +15V / -15V

STANFORD RESEARCH SYSTEMS, Inc. 1290-D Reamwood Avenue Sunnyvale, CA 94089 (408) 744-9040		
Title: OUTPUT DRIVERS & POWER REGULATORS		
Size: C	Document Number: 850-D3	REV: E


+5.6V
19mA
R450
22
≡≡≡000120
C450
10u-T35
U401
PCM1700P
D/A DATA L
D/A DATA R
D/A CLK
D/A LOAD1
DATA L
DATA R
CLOCK
LE
DCOM
DCOM
MSB ADJ L
VPOT
MSB ADJ R
CAP L
IOUT L
ACOM L
SJ L
VOUT L
CAP R
IOUT R
ACOM R
SJ R
VOUT R
C403
.1u
C404
.1u
C410
82P
TP401
(SSI)
TP402
R401
280
(AUX)
C405
.0033u
SINE OUT
46mA
≡≡≡000130
C401
.1u
C402
.1u
R451
10
-5.6V
C453
10u-T35
+5.6V
R452
22
≡≡≡000135
C456
10u-T35
U402
PCM1700P
C408
.1u
C409
.1u
TP403
(SSI)
TP404
R402
280
(AUX)
C407
.1u
C406
.1u
≡≡≡000152
R453
10
-5.6V
C459
10u-T35
D/A LOAD2
D/A MUX-S/H
DSP MUX0
DSP MUX1
DSP MUX2
+5.6V
R470
100
≡≡≡000142
C470
2.2u-T35
U403
74HC4051
≡≡≡000155
C471
2.2u-T35
R471
100
-5.6V
N420B
10Kx4I
C422
.1u
C423
.01u
U404B
74HC4053
X OUT
FRONT OUT1
-X/MUX1
N420D
10Kx4I
C426
.1u
C427
.01u
U404C
74HC4053
Y OUT
FRONT OUT2
-Y/MUX3
N420A
10Kx4I
C420
.1u
C421
.01u
IN OFFSET
ANALOG CTRL1
N420C
10Kx4I
C424
.1u
C425
.01u
OUT OFFSET
ANALOG CTRL2
N421A
10Kx4I
C428
.1u
C429
.01u
DAC OUT1
N421B
10Kx4I
C430
.1u
C431
.01u
DAC OUT2
N421C
10Kx4I
C432
.1u
C433
.01u
DAC OUT3
N421D
10Kx4I
C434
.1u
C435
.01u
DAC OUT4
-X/MUX1
-Y/MUX3
+5.6V
U404D
74HC4053
-5.6V
STANFORD RESEARCH SYSTEMS, Inc.
1290-D Reamwood Avenue
Sunnyvale, CA 94089
(408) 744-9040
Title
D/A CONVERTERS & OUTPUT MUX
Size
C
Document Number
850-D4
REV
E

(OR USE 74HC597)

U502 74HC595

U503 74HC595

U504 74HC589

U505 74HC589

U501 DSP56001-FE2

R502 270

R501 10K

R503 10K

TP501

N501A 82x4I

THESE 3 LINES DRIVE A RIBBON CABLE!

FOR EXTERNAL ACCESS:
>$1FF & <$FFC0

AUX_RXDATA
AUX_RXCLK
AUX_RXFS
AUX_TXCLK
AUX_TXFS
AUX_TXDATA
-RD
-WR
DSP_D[0..15]
-IRQA
-DSP_RESET
D[0..7]
A0
A1
A2
-DT/R
-DSP_CS
DSP_RXCLK
DSP_RXFS
DSP_TXFS
DSP_TXCLK
DSP_RXDATA
DSP_CLK
CHK[0..6]
SINE_D[0..7]
DSP_MUX0
DSP_MUX1
DSP_MUX2
DSP_TXDATA
LO_RANGE
STATE_HOLD

STANFORD RESEARCH SYSTEMS, Inc.		
1290-D Reamwood Avenue Sunnyvale, CA 94089 (408) 744-9040		
Title: DSP & SERIALIZERS		
Size: C	Document Number: 850-05	REV: E

VCC +5V

U621A 74HC113
U622A 82C54
U623A 74HC00
U622B 82C54
U621B 74HC113
U623B 74HC00
U622C 82C54
R611 270
12MHZ
-CNTR_RDY
-REF_EDGE
CNTR_OVFL

POWER CONNECTOR

60 PIN EDGE CONNECTOR
ODD PINS ON COMP SIDE
PIN 1 TOWARDS REAR

JP601 EDGE60
+5V
-5V
+22V
-22V
PINS 23 THRU 34 POWER FOR ANALOG BOARD
IN_OVLD
GAIN_OVLD
SENS1
SENS2
AMP_DC_CPL
FS/2
A/D_MUX0
A/D_MUX1
NOISE_ON
A/D_DAT_L
A/D_DAT_R
A/D_CLK
A/D_CONV
A/D & MUX

PAL_CLK
CHK[0..6]
STATE_HOLD
C601 .001u
R601 10K
S[0..6]
INT0

U601 GAL16V8-20
U602 GAL16V8-20
U603 GAL16V8-20
U604 GAL16V8-20
U606 GAL16V8-20

AUX_RXCLK
DSP_RXCLK
DSP_RXFS
AUX_RXFS
DSP_RXDATA
AUX_RXDATA
N603A 82x4I
A/D_CONV
A/D_CLK
A/D_DAT_L
A/D_DAT_R
DSP_TXFS
AUX_TXFS
AUX_TXCLK
DSP_TXCLK
D/A_DATA_R
D/A_DATA_L
DSP_TXDATA
AUX_TXDATA
MSP_DATA_OK
LO_RANGE
AMP_DC_CPL
D/A_MUX-S/H
D/A_LOAD1
D/A_LOAD2
D/A_CLK
82x4I N604A
LOAD DELAY BY 8nS
C611 100P
C610 100P
N602A 10KX5
DSP_CLK
CMD0
CMD1
ARDY
-DIG_EN
-IRQA
-RFD
-ANALOG_EN
-DSP_CS
REF_EDGE
ANALOG: 218H, WR
DIGITAL: 220H
SHORT CMD: 200H
LONG CMD: 210H
DSP CS: 208H

L601 33uH
+5V_DF
C630 47U-E35
C602 .1U-T
C603 10U-T35
C631 10U-E35
-5V

PLATFORM CONNECTOR

40 PIN EDGE CONNECTOR
ODD PINS ON COMP SIDE
PIN 1 TOWARDS REAR

JP602 EDGE40
R603 1K
-RESET
C604 .001U
12MHZ
ARDY
-DS
-WR
-DT/R
-PCS4
A0
A1
A2
A3
A4
D0
D1
D2
D3
D4
D5
D6
D7
INT1
INT0
-RD
-RESET
ANALOG_D0
ANALOG_D1
ANALOG_D2
ANALOG_D3
ANALOG_D4
ANALOG_D5
ANALOG_D6
ANALOG_D7
LATCH_CK1
LATCH_CK2
DATA

U630A 74HC74
ENA_DPLL
REF_EDGE
-IRQA

U630B 74HC74
R604 10K
R602 270
TRIG_IN
-TRIG_CLR

U613 74HC573
U623C 74HC00
U623D 74HC00
-PCS4
-RESET
DS

U614B 74HC139
ZERO_BUS
LATCH_CK1
LATCH_CK2
-ANALOG_EN
@218H
@214H
@21CH

U614A 74HC139
-STATUS_RD
LATCH_CLK3
-CNTR_CS
LATCH_CLK4
-DIG_EN
@220H
@228H
@230H
@238H

DSP_MUX0
DSP_MUX1
DSP_MUX2
-UNLOCK
ANALOG_EN
FS/2
A/D_MUX0
A/D_MUX1

N602D 10KX5
N602E 10KX5

C650 C651 C652 C653 C654 C655 C656 C657 C658 C659 C660 C661 C662 C663 C664 C665 C666 C667 C668 C669 C670 C671
.1u-T

N601 270x8I
U610 74HC245
DCO..7J
ADDRESS: 228H (552)
U608 74HC273
-DSP_RESET
ENA_DPLL
-TTL_REF
-POS_EDGE
-VCO_ON
-SEL_VCO
-XTAL_ON
-SEL_XTAL
LATCH_CLK3
-RESET

U611 74HC573
IN_OVLD
GAIN_OVLD
SENS1
SENS2
-UNLOCK
TRIG_IN
CNTR_OVFL
-CNTR_RDY
-STATUS_RD

ADDRESS: 238H (568)
U609 74HC273
NOISE_ON
-TRIG_CLR
LFO
LF1
-SINE/10
-X/MUX1
-Y/MUX3
LATCH_CLK4

U622D 82C54
U612 74HC573
-CNTR_CS
-RD
-WR
ANALOG_EN
ANALOG_D0
ANALOG_D1
ANALOG_D2
ANALOG_D3
ANALOG_D4
ANALOG_D5
ANALOG_D6
ANALOG_D7

STANFORD RESEARCH SYSTEMS, Inc.		
1290-D Reamwood Avenue Sunnyvale, CA 94089 (408) 744-9040		
Title TIMING GEN., FREQ CNTR. & PLATFORM INTERFACE		
Size C	Document Number 850-D6	REV E

GAIN = 7
POSITIVE POLARITY

A/I
B
J101 RCA
J102 RCA
K102A HS-211
R102 1.00M
R103 100M
R141 22K
OVRLD1
TP102
C101 1P
K101A HS-212
R101 1K
U101A AD645
K101B HS-212
K104A HS-212
C102 0.1U-PPS0
K104B HS-212
C103 0.1U-PPS0
K103A HS-211
R106 49.9
R107 49.9
R108 10M
R109 10M
K105A HS-211
R140 10
R104 10K
10n @ INPUT CONNECTOR

Offset Adjust
+15V_FE
P101 100K-20T
U105B OPA2604
R110 102K
R114 1.000K
R119 1.000K
-15V_FE
U103A NE5534
TP101
PREAMP_OUT
R123 102K
R127 100K-1%
R126 100K-1%
R133 22K
OVRLD2
N102A 10Kx4I
N103A 1.5Kx4I
U108A
U108B
NPD5564
N102D 10Kx4I
N103D 1.5Kx4I
U102A
U102B
NPD5564
U109A OPA2604
N103B 1.5Kx4I
N102B 10Kx4I
U109B OPA2604
N103C 1.5Kx4I
N102C 10Kx4I
CMRR Adjust
P102 20-20T
R111 2.150K
0V
R115 357.0
R124 2.150K
R125 10
R120 357.0
C104 6.8P
U105A OPA2604
WILL OSCILLATE WITHOUT CAP
C106 2.2u-T35
D101 1N5232
5.6V
R130 49.9K
R131 10K
R129 1K

K101C HS-212
-A/I
K102B HS-211
I=100
K103B HS-211
A-B
K104C HS-212
DC COUPLED
K105B HS-211
GROUND

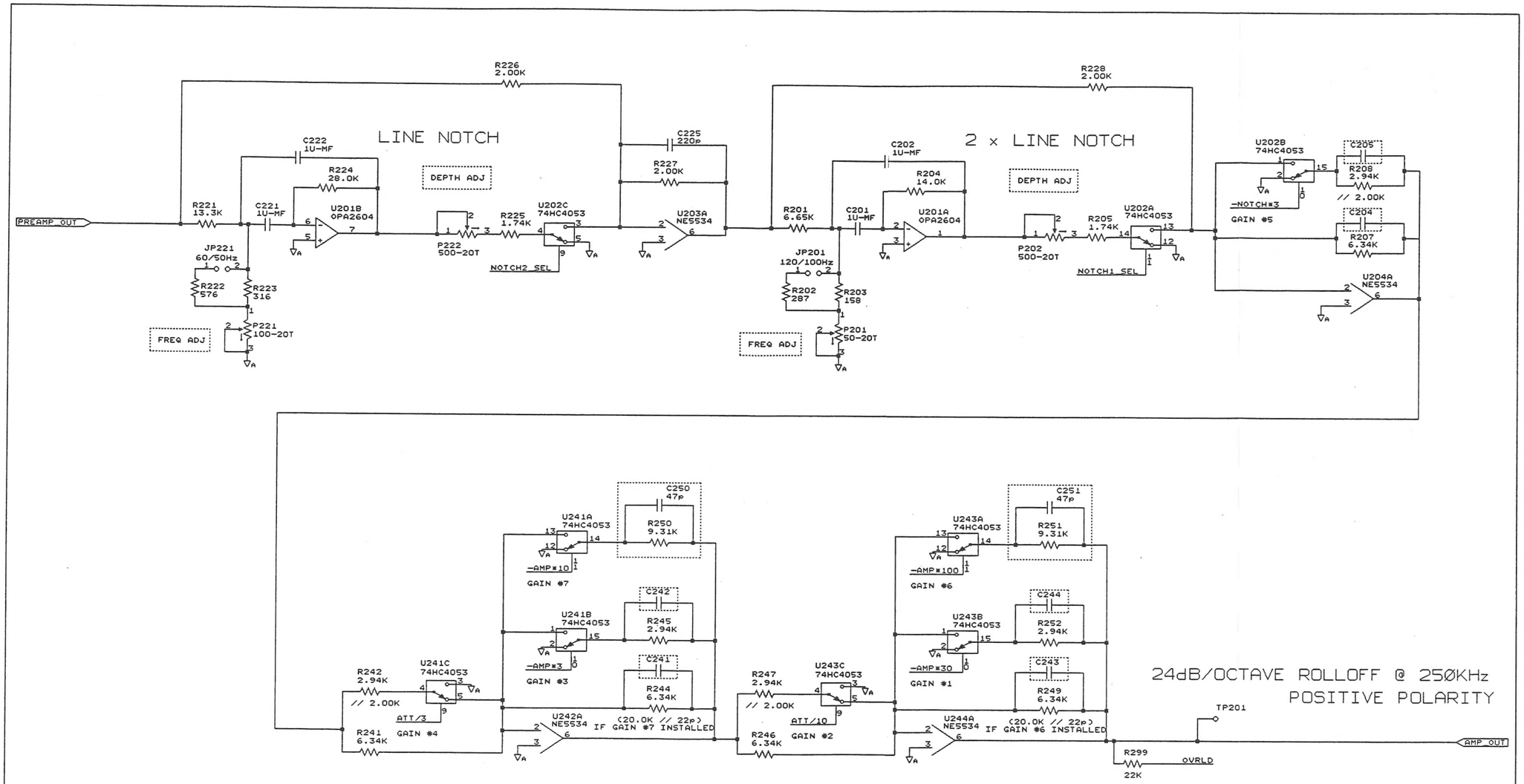
D180 1N4148
U180 78L15
R180 10
.44V
+20V
C180 10u-T35
C182 2.2u-T35
C181 10u-T35
U181 79L15
C183 2.2u-T35
R181 10
.41V
-20V
D181 1N4148
TP103
TP104

C150 10u-T35
C151 10u-T35
R150 56
.4V
U101B
AD645
P103 100K-20T
I OFFSET
R151 56
C152 .1u-T
C153 .1u-T
U103B NE5534
U105C OPA2604
U109C OPA2604

N101A 47Kx3I
R132 374K
U106 LM393
OVRLD1
SET TO 12.0V
(3V BELOW RAILS)
N101C 47Kx3I
N101B 47Kx3I
-INPUT OVRLD
C111 .1u
OVRLD2
U104 LM393

STANFORD RESEARCH SYSTEMS, Inc.
1290-D Reamwood Avenue
Sunnyvale, CA 94089
(408) 744-9040

Title: CURRENT AMPLIFIER & PRE-AMPLIFIER
Size: C
Document Number: 850-A1
REV: E



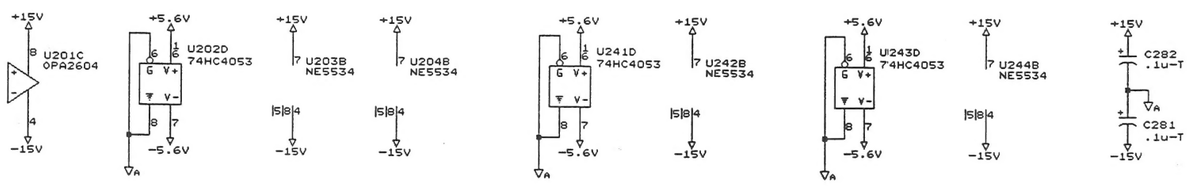
NOTCH1_SEL — NOTCH1_SEL
NOTCH2_SEL — NOTCH2_SEL

-NOTCH*3 — -NOTCH*3

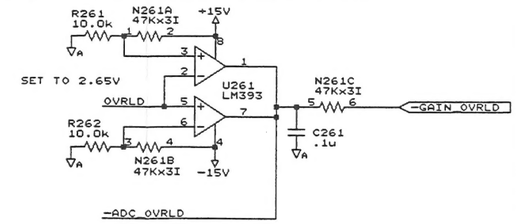
-AMP*3 — -AMP*3
-AMP*10 — -AMP*10
-AMP*30 — -AMP*30
-AMP*100 — -AMP*100

ATT/10 — ATT/10
ATT/3 — ATT/3

-ADC_OVRLD — -ADC_OVRLD



(ALLOW FOR A x5 INTERMEDIATE SIGNALS IN AAF!)



STANFORD RESEARCH SYSTEMS, Inc.	
1290-D Reamwood Avenue Sunnyvale, CA 94089 (408) 744-9040	
Title: NOTCH FILTERS & SIGNAL AMPLIFIER	
Size: C	Document Number: 850-A2 — REV: E

ANTI ALIASING FILTER

PASSBAND: DC-108KHz
STOPBAND: 168 KHz
STOPBAND ATTENUATION: 100dB

2.0V -> 10V

AMP_OUT

+15V

R301 3.9M

R311 2.21K
R321 2.43K
R331 2.10K
R341 1.91K
R351 619

R312 56.2
R322 357
R332 511
R342 309

U311A NE5532
U321A NE5532
U331A NE5532
U341A NE5532

C311 1000P
C321 1000P
C331 1000P
C341 1000P

R313 2.61K
R323 2.15K
R333 1.82K
R343 1.54K

C312 1000P
C322 1000P
C332 1000P
C342 1000P

U311B NE5532
U321B NE5532
U331B NE5532
U341B NE5532

R314 2.000K
R324 2.000K
R334 2.000K
R344 2.000K

R315 2.000K
R325 2.000K
R335 2.000K
R345 2.000K

C351 1000P

U301B NE5532

TP302

R303 1.00K
R302 1.00K

R388 1.0K
U386A NE5534
R387 100
C386 33P
R386 4.02K
R389 1.00K

MONITOR_OUT

R398 22K
OVRLD

C303 100P
R306 2.00K
R304 2.00K
C301 1u-MF
U301A NE5532
TP301
SIGNAL_OUT

U302C 74HC4053
AMP_DC_CP

C302 1u-MF
R305 20.0K
TP303

C363 0.001U
R363 5.0K
C362
R361 10
U361A LF357
C361 0.01U
R364 20.0K
C365 2.2P
R365 10M
U362A LF357

R371 1.40K
R381 1.62K
R379 787

U303A NE5532

U304A NE5532
R309 1.00K
R308 1.000K
R307 1.000K
U304B NE5532

U302A 74HC4053
FS/2

U302B 74HC4053
NOISE_ON

U303B NE5532

R372 162
C371 10000P
U371A NE5532
R373 1.40K
C372 10000P
R374 2.00K
U371B NE5532
R375 2.00K

R382 69.8
C381 10000P
U381A NE5532
R383 1.33K
C382 10000P
R384 2.00K
U381B NE5532
R385 2.00K

C390 10000P

U391A LF353
ADC_REF
2.75V
SET TO 2.5V
R395 1.00K
U305 LM393
R396 10.0K
R397 10.0K
OVRLD
-ADC_OVRLD
U391B LF353

ADC_REF
AMP_DC_CP
NOISE_ON
FS/2

U311C NE5532
U321C NE5532
U331C NE5532
U341C NE5532
C391 .1u-T
C392 .1u-T

U361B LF357
U362B LF357
U371C NE5532
U381C NE5532
-15V_FE

U302D 74HC4053
R391 10
R392 10
C393 .1u-T
C394 .1u-T
U303C NE5532
U304C NE5532

U301C NE5532
C395 .1u-T
C396 .1u-T

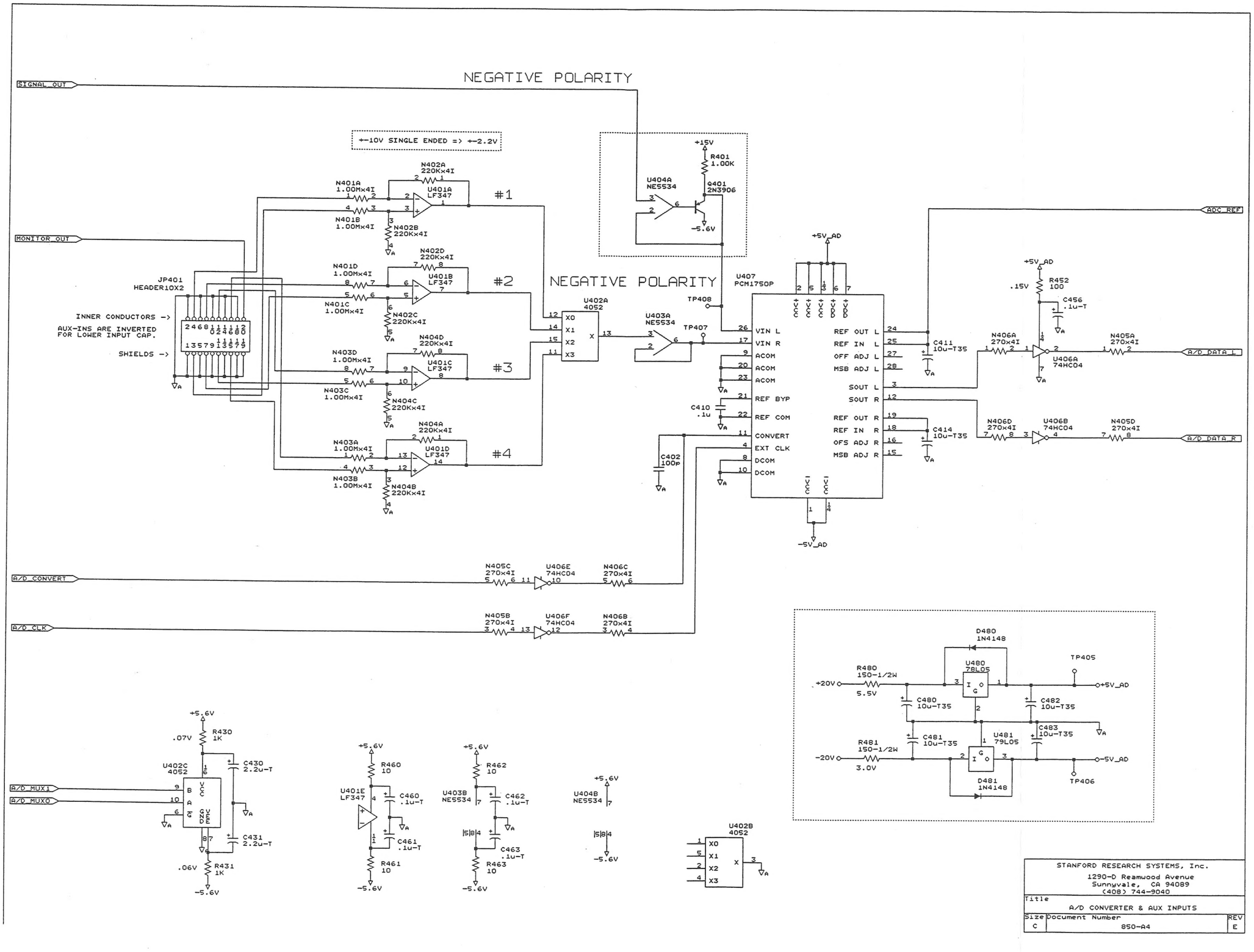
U386B NE5534
R393 10
C397 .1u-T
C398 .1u-T
R394 10

U391C LF353

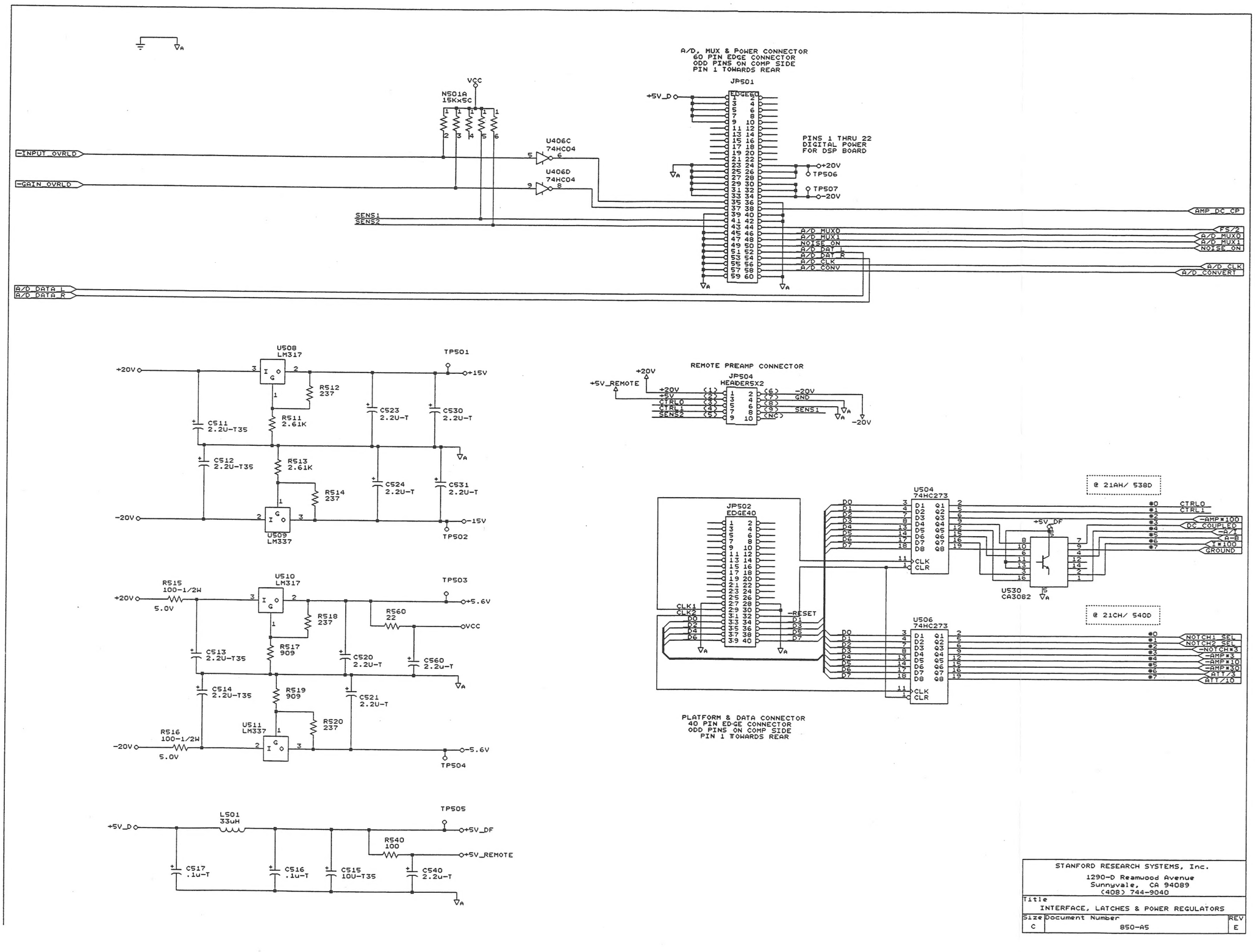
STANFORD RESEARCH SYSTEMS, Inc.
1290-D Reamwood Avenue
Sunnyvale, CA 94089
(408) 744-9040

Title: SIGNAL SHAPING

Size	Document Number	REV
C	850-A3	E



STANFORD RESEARCH SYSTEMS, Inc.		
1290-D Reamwood Avenue Sunnyvale, CA 94089 (408) 744-9040		
Title	A/D CONVERTER & AUX INPUTS	
Size C	Document Number 850-A4	REV E



STANFORD RESEARCH SYSTEMS, Inc.
1290-D Reamwood Avenue
Sunnyvale, CA 94089
(408) 744-9040

Title: INTERFACE, LATCHES & POWER REGULATORS

Size	Document Number	REV
C	850-A5	E